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The CentOS CI: A Getting Started Guide

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whoami

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Agenda

- Background of the CentOS CI
- A Recipe For Your First Test: Web UI
- A Recipe For Your Next Test: JJB
- Final Thoughts and Future Plans

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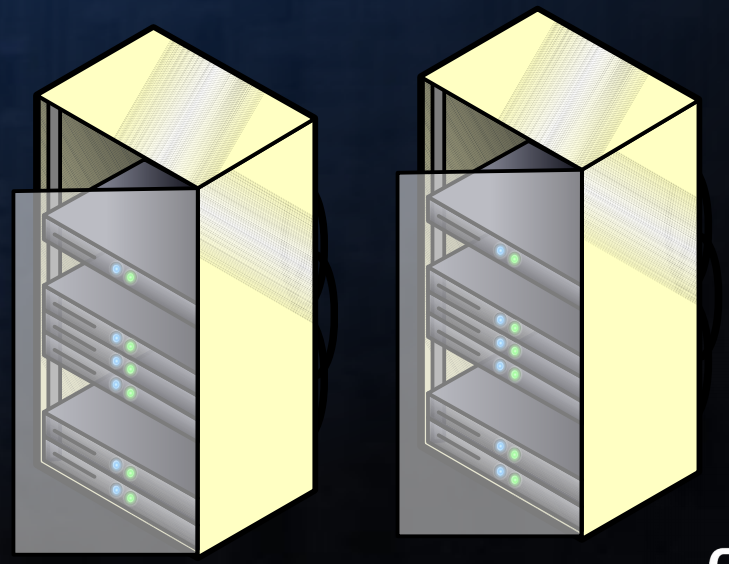
What is the CentOS CI Infrastructure?

- 256 physical machines spread across 4 chassis
  - physical machines == bare metal
  - More information at https://wiki.centos.org/QaWiki/PubHardware
- Bare metal allows for testing of unique workloads
  - Allows for testing of Virtualization Technology



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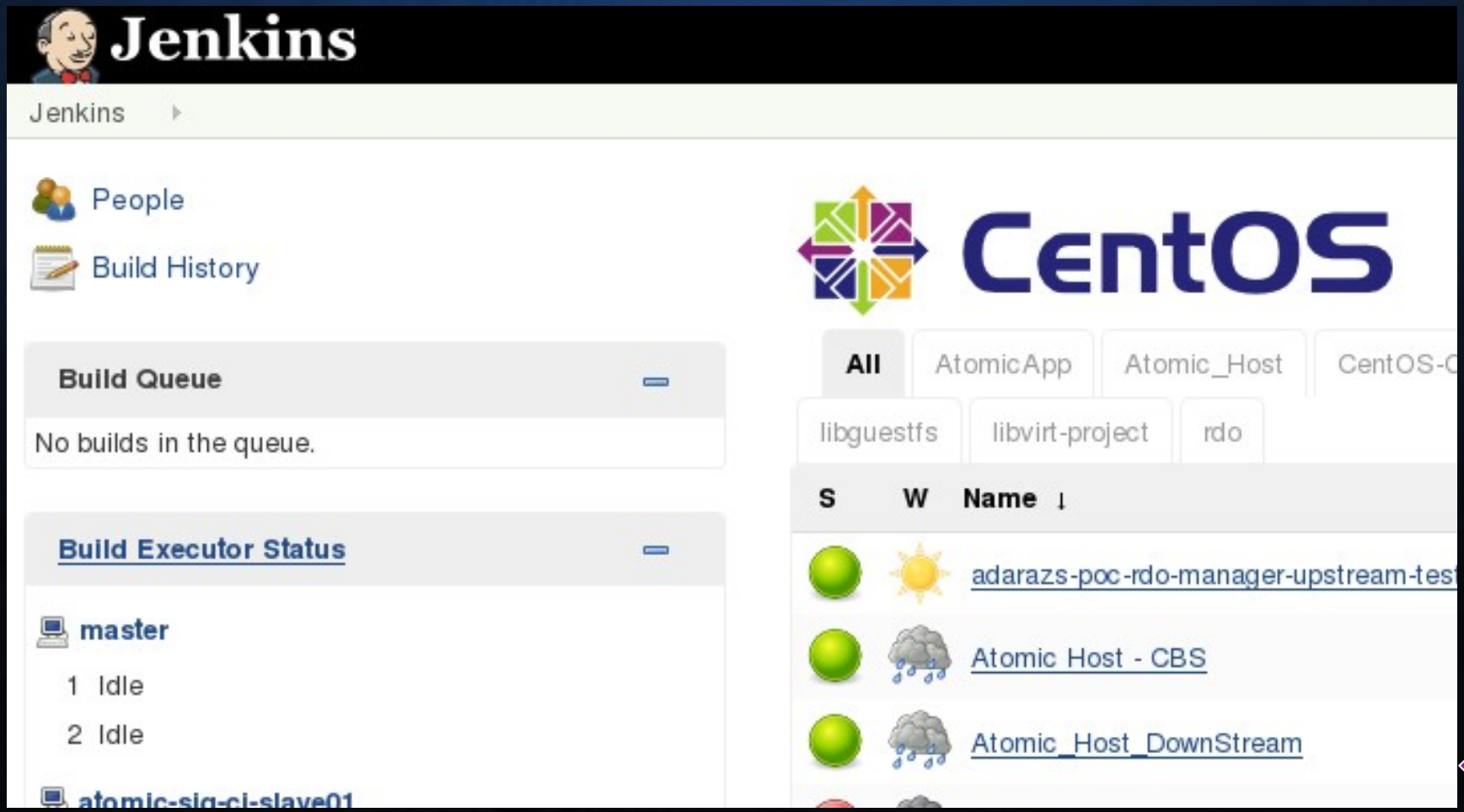
What is the CentOS CI Infrastructure?

- Jenkins Frontend for ci.centos.org



Who is the CentOS CI for?

- Upstream Projects/Communities
- Requirements:
  - Project Must Be Re-Distributable
    - Open Source is a +!
  - Project Must Utilize CentOS as a Platform

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Who is currently using the CI?

- RDO Project – Openstack Testing
- Libvirt Project
- Libguestfs Project
- Foreman Project
- Project Atomic (Atomic Host & Atomic App)
- Software Collections
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Testing Architecture

- What happens when I run a test?
  - Jenkins contacts a slave and executes commands
  - These commands should talk to Duffy to provision machines.
  - After machine provisioning, the slave can then execute tests on the provisioned machines.

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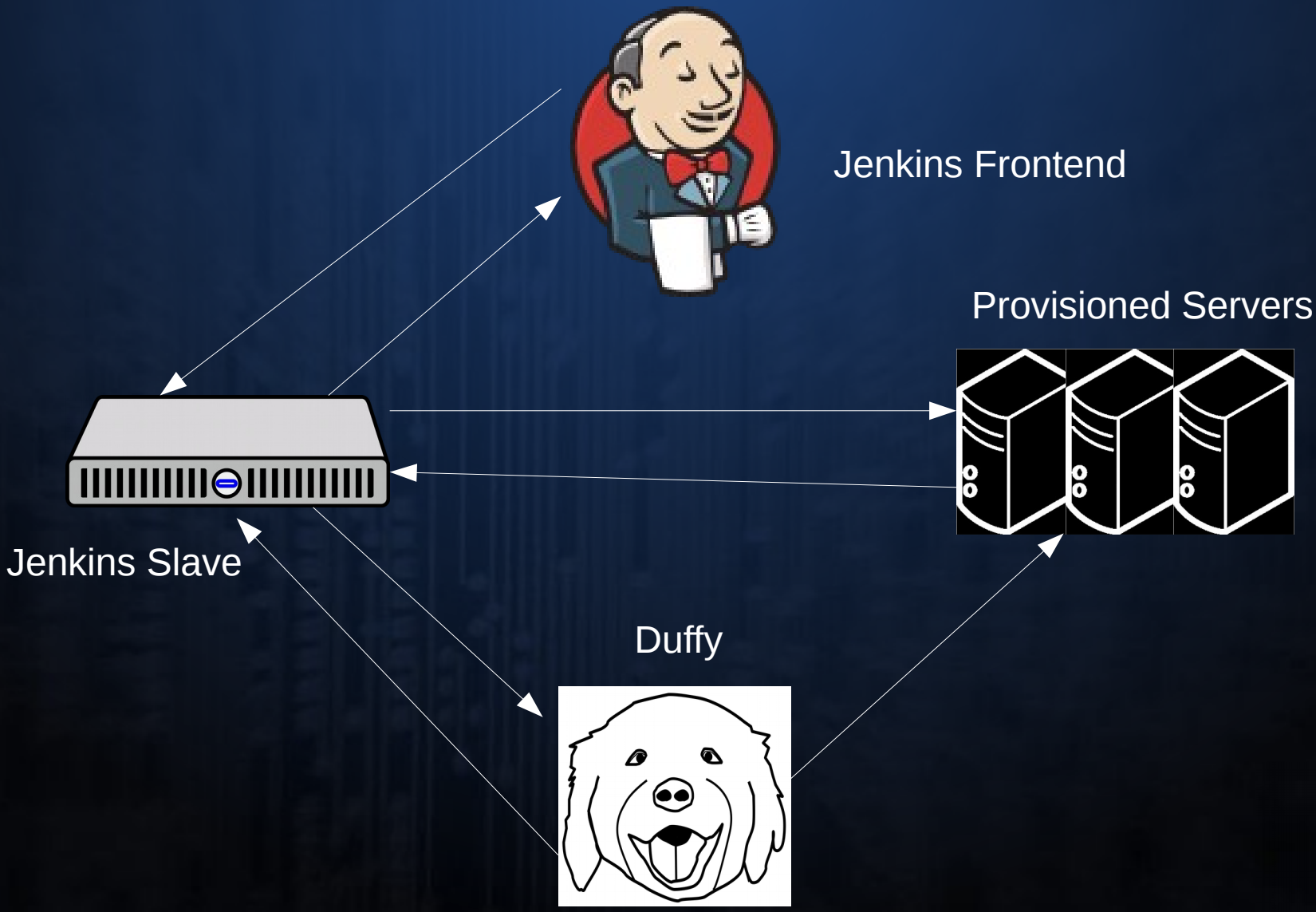
Testing Architecture



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Step 1: Get Credentials

- When you gain access to the CI you will get:
  - A username/password for the Jenkins frontend
  - An API key to use with Duffy
  - A target slave type to be used for your testing

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Step 2: Git Repo With Test

- Create a test script to run
  - Install Software
  - Set up Machine for Test
  - Execute Test
- Place it in a git repo that can be cloned
  - This will be the source of the tests that get run

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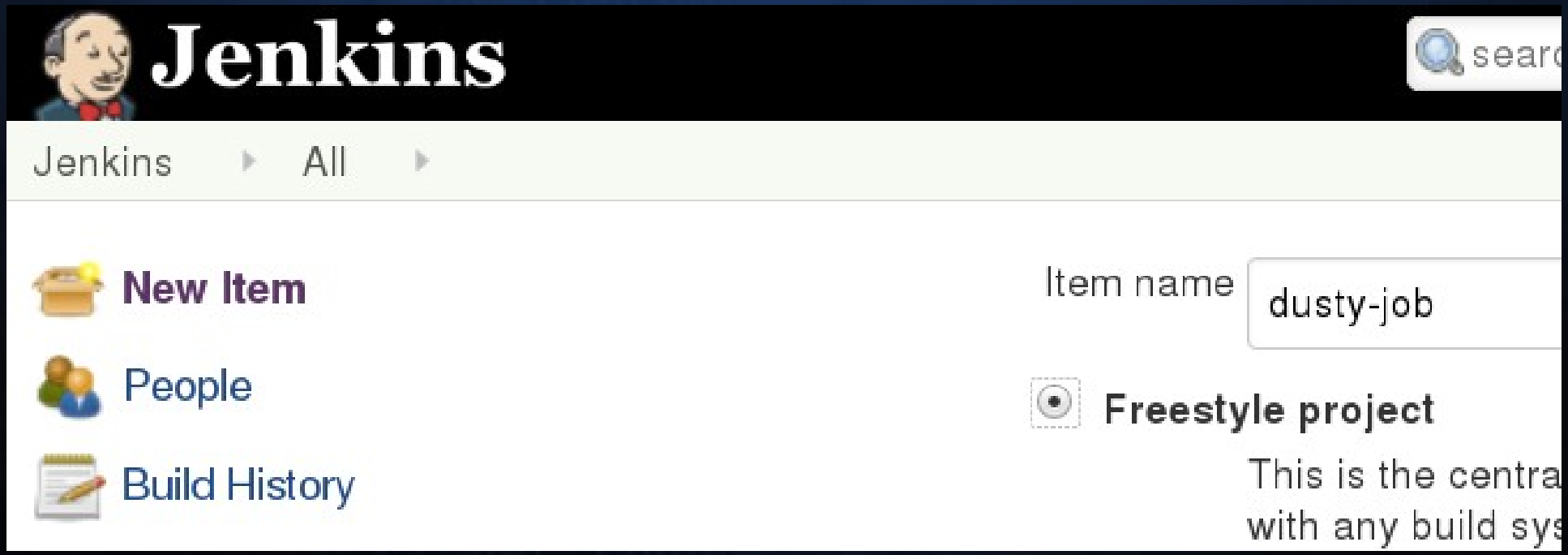
Step 3: Create a new Job

- "New Item" → "Freestyle Project"



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Step 4: Configure Job

- Check "Restrict where this project can be run"
  - Enter label for your slave type

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Step 4: Configure Job

- Check "Inject environment variables to the build process" under "Build Environment"
  - Populate these environment variables
    - GIT_REPO_URL – The git repo where your test lives
    - TEST_CMD – The command to execute from within the git repo
    - API_KEY – The Duffy API Key that was provided to you

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Step 4: Configure Job

Build Environment

- [ ] Delete workspace before build starts
- [ ] Abort the build if it's stuck
- [ ] Add timestamps to the Console Output
- [ ] Color ANSI Console Output
- [x] Inject environment variables to the build process

Properties File Path

Properties Content

```
API_KEY=aaaaaaaa-bbbb-cccc-dddd-eeeeeeeeeeee
MACHINE_COUNT=1
TEST_CMD='./run_tests.sh'
GIT_REPO_URL='https://github.com/dustymabe/centos-ci-example.git'
```

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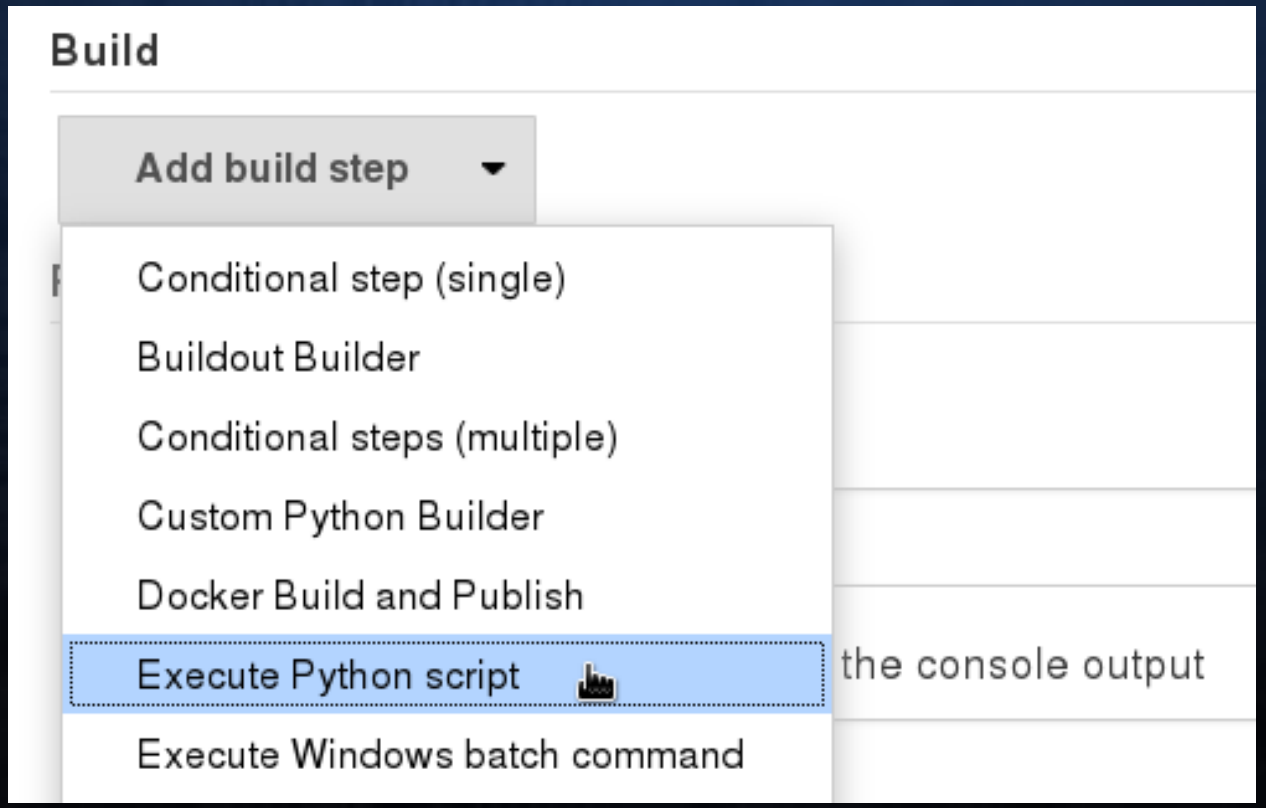
Step 4: Configure Job

- Click on the "Add Build Step" dropdown and select "Execute Python Script"



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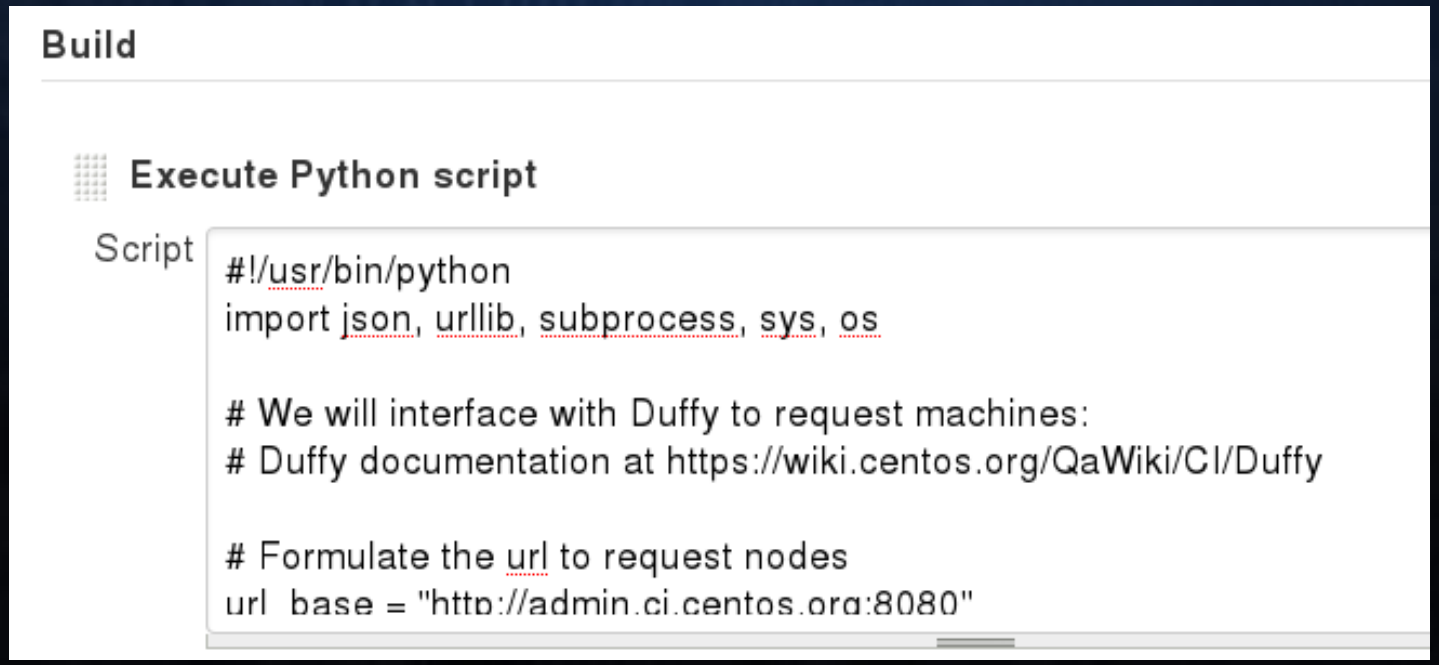
Step 4: Configure Job

- Populate A Python Script in the Text Box
  - Retrieve python script from following URL:
    - https://github.com/dustymabe/centos-ci-example/blob/master/jjb/run.py



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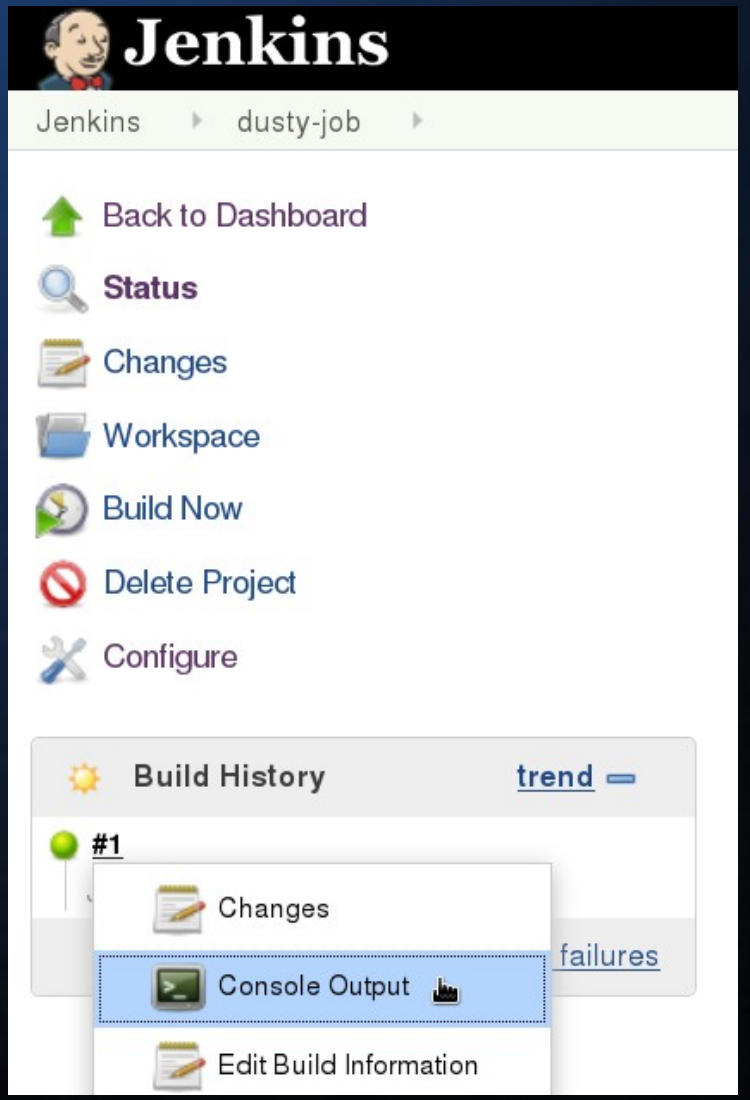
Step 5: Run Job

- Now You Can Run Your Job!
  - Click "Build Now" and then view "Console Output"



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Using Jenkins Job Builder

- Automate creating/updating jobs
  - http://docs.openstack.org/infra/jenkins-job-builder/

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Using Jenkins Job Builder

- Installing
  - `# yum install -y /usr/bin/jenkins-jobs`
- Making a config file
  - `# cat <<EOF > jenkins_jobs.ini`

```
[jenkins]
user=username
password=password
url=https://ci.centos.org
EOF
```

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Using Jenkins Job Builder

- Create Job description
  - `# curl http://dustymabe.com/content/2016-01-23/run.py > run.py`
  - `# cat <<EOF >job.yaml`

```
- job:
    name: dusty-ci-example
    node: atomicapp-shared
    builders:
        - inject:
            properties-content: |
                API_KEY=aaaaaaaa-bbbb-cccc-dddd-eeeeeeeeeeee
                MACHINE_COUNT=1
                TEST_CMD='./run_tests.sh'
                GIT_REPO_URL='https://github.com/dustymabe/centos-ci-example.git'
        - centos-ci-bootstrap
- builder:
    name: centos-ci-bootstrap
    builders:
        - python:
            !include-raw: './run.py'
EOF
```

Using Jenkins Job Builder

- Update/Create Jobs in Jenkins
  - ```
    # jenkins-jobs --conf jenkins_jobs.ini update job.yaml
    INFO:root:Updating jobs in ['job.yaml'] ([])
    INFO:jenkins_jobs.local_yaml:Including file './run.py' from path '.'
    INFO:jenkins_jobs.builder:Number of jobs generated:  1
    INFO:jenkins_jobs.builder:Reconfiguring jenkins job dusty-ci-example
    INFO:root:Number of jobs updated: 1
    INFO:jenkins_jobs.builder:Cache saved
    ```

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    ```

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Where do I sign up?

- Please see our Getting Started wiki page
  - https://wiki.centos.org/QaWiki/CI/GettingStarted
  - Look at the "Asking for your project to be added" Section
- Every project has different needs
  - Start a conversation with us to see if the CI is right for your project
  - ci-users@centos.org or #centos-devel on Freenode

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Future Plans

- Clustering of instances
  - Allows for setting up private networks
- Openstack instances
  - Allows for testing “cloud” workloads
- Alternate Architectures
  - ARM
  - and beyond!

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Links and Pointers

- CentOS Project:
  - centos.org
- CI Getting Started Wiki:
  - https://wiki.centos.org/QaWiki/CI/GettingStarted
- This presentation:
  - As a blog post:
    - http://dustymabe.com/2016/01/23/the-centos-ci-infrastructure-a-getting-started-guide/

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Thank you :-)

Any questions?

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